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A COMMON VISION ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT

Note by the UNCTAD secretariat

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Introduction

1. The Economic and Social Council, in its resolution 1995/4, endorsed the recommendations adopted by the Commission on Science and Technology for Development (CSTD) at its second session, and invited the CSTD to consider ways and means of taking advantage of the twentieth anniversary of the Vienna Conference on Science and Technology for Development for the formulation of a common vision for the future contribution of science and technology for development. To this end, the CSTD organized, in December 1996, the first panel meeting of members of the CSTD which outlined specific areas that could be dealt with by expert group meetings as a basis for developing a common vision. The specific issues to be considered were:

(a) The concrete impact of science and technology on development; generic and sectoral policies;

(b) Capacity-building in science and technology, including aspects relating to conceptualization, experiences, management and the examination of new opportunities;

(c) The interaction of private enterprises, Governments, academic institutions and civil society groups with science and technology for development;

(d) Assessment of international cooperation networks and of the work of organizations active in the field of science and technology.

2. Some of these issues, in particular those related to item (a), were examined during the 1995-1997 inter-sessional period by the panel on a common vision. At its third session, the CSTD reviewed the work of the panel, having before it the following documents: (a) a note by the Secretariat setting out the background to the evolution of thinking on science and technology from 1963, the date of the first international conference on the subject, up to the 1979 Vienna Conference on Science and Technology for Development, and on the issues that have emerged in the 1990s (E/CN.16/1997/7); (b) the report of the December 1996 panel meeting (E/CN.16/1997/CRP.2); and (c) the summary of discussions at the workshop held at Ocho Rios, Jamaica, from 30 April to 2 May 1997 (E/CN.16/1997/Misc.1).

3. On the basis of the progress made, resolution 1997/62 of the Economic and Social Council recommended that the CSTD should carry out a programme of preparation on a common vision as set out in the report of the panel meeting of December 1996, by holding expert group meetings. Two expert group meetings were therefore held, the first in Addis Ababa, from 13 to 14 November 1997, and the second in Geneva, from 8 to 10 December 1998. The report of the latter meeting is available as document E/CN.16/1999/Misc.1, and contains a background paper by the secretariat which also includes the main findings of the Addis Ababa meeting.

4. The CSTD Bureau, at its meeting in Sliema, Malta, on 30 September 1998, decided that the outcome of the last expert group meeting should lead to a succinct report to be submitted to the fourth session of the CSTD for its consideration. The report should synthesize the views of the CSTD on its vision of the role of science and technology in development for the twenty first century and should be widely disseminated. To be known as the "Vision statement", it could be presented at various forums, including the World Science Conference organized by UNESCO (to be held in Budapest, from 26 June to 1 July 1999). This document has been prepared pursuant to this decision, while a more detailed background report prepared by a consultant is contained in document E/CN.16/1999/CRP.1.

The Vision Statement

5. The triumphs of scientific discovery and technological innovation of the past two decades have greatly increased our understanding of the world we live in and the benefits we derive from it, but these benefits have been unevenly distributed across nations and within them. The process of rapid accumulation of knowledge and skills evident in some parts of the world has not reached the hundreds of millions of people still living in absolute poverty, nor has the progress of science and technology been without impact on the resources that are our common heritage. The resulting knowledge gap between the North and the South has therefore grown wider, making it even more difficult for the Governments of the South to fulfil the needs and aspirations of their peoples.

6. We believe that one of the central issues of the coming millennium will be the need to build capacity in developing countries so that they can adapt to the challenges of continuous change. In pursuing this goal, the United Nations Commission on Science and Technology for Development (CSTD) is committed to the common vision of a global entitlement to knowledge and to the benefits of science and technology for development in the twenty-first century. Achieving this objective will require universal access to information and to financial and technical resources, as well as the ability to use them constructively.

7. To achieve this, it will be necessary to formulate national policies and establish international arrangements that safeguard and protect the interests of all people on the planet as well as those of future generations. Individual States and the United Nations system as a whole must work towards this end.

8. While globalization and liberalization have brought with them new competitive requirements for firms everywhere in the world, they have also put greater pressure on Governments to become more innovative in policy design, and to pay more attention to policy coherence and to the impact of their policies on people and the environment. Greater efforts, therefore, will be needed to develop new types and sources of information and hence a more transparent and participatory policy-making process. Society as a whole must become a learning institution.

9. In moving towards a world in which the benefits of scientific and technological change are spread widely across society, States will increasingly be called upon to motivate and interact with a larger number of actors than in the past, for the process of innovation is interactive and system-wide. Strengthening national and local systems of innovation and ensuring that their outcomes enhance general welfare will therefore require close cooperation between actors, ranging from governments - at both national and local levels - and the scientific, research and development and business communities to non-governmental organizations and other segments of civil society. The UNCTAD secretariat, under the guidance of the CSTD, should contribute to this process by continuing to assist Governments from developing countries governments in reviewing the effectiveness of their national and local systems of innovation, and by making available information on how such linkages are created and sustained.

10. The ability of economic and social actors to generate and absorb new knowledge is fundamental to the dynamic functioning of innovation systems. In the area of education, priority should be given to: (a) the elimination of illiteracy; (b) increased investment in higher education, especially engineering and science; and (c) the promotion of vocational training. Collaboration with the private sector would be helpful in matching skills and needs.

11. The goal of universal access to basic education for all women, in view of their vital role in many aspects of society and the economy, is particularly important to the process of using and diffusing new knowledge. New policies and services will be needed to bring women into the mainstream of technological change in the new millennium. To achieve that, it will be necessary to remove the obstacles that women encounter in obtaining a university education, pursuing a career in science and engineering, and participating in the decision-making that shapes the direction of scientific and technological change and, more broadly, determines its impact on development efforts. Governments will need to take the lead in making fuller participation by women a reality.

12. The world of the twenty-first century will be one in which knowledge generation increasingly takes place within the networks of large transnational corporations. In such a world, there will be opportunities for the monopolization of scientific and technological knowledge and the potential to restrict the free flow of information. It will be necessary to provide greater support for research in the public sector particularly in the areas of health and agriculture, in order to make sure that local interests and needs are acted upon, to encourage the further development of indigenous knowledge systems, and to increase capacities for the assimilation of transferred technology. Research institutions, however, cannot be expected to play both a long term public research function and an entrepreneurial role aimed at short-term objectives. It will be necessary to create and support intermediary institutions, in order to build linkages between the users and producers of knowledge in developing countries, where enterprises are small, their capacity to seek and evaluate information weak, and their in-house development capabilities limited. National and local Governments all have a role to play in this process, as do international educational and research networks.

13. In the world of the twenty-first century, nations and their economies will be more than ever embedded in a vast array of international institutional arrangements and economic, scientific, technological and social interactions. These, we believe, are critical vehicles for acquiring the knowledge and information required for development. As only a small minority of developing countries have succeeded in attracting significant inflows of foreign investment, more attention will need to be given to alternative channels for acquiring know-how from external sources, such as supplier-customer linkages, licensing, alliances, partnership arrangements and networks for joint research and development, production and distribution. Thanks to these linkages, exporting has proved a highly effective means of acquiring technological capabilities. The international community has a role to play in creating new mechanisms to support the flow of technology and in assisting developing countries to become more attractive both to foreign investors and to potential trade and technology partners.

14. To build local technological and productive capabilities, greater flexibility will be needed in international trade, investment and intellectual property agreements. With regard to trade, the implementation of the Uruguay Round agreements needs to be flexible enough to permit some protection, of limited duration, for infant industries considered as having export potential. Formal negotiations on such arrangements may be necessary. As the coverage of patent and copyright protection expands ever more widely to include life forms and data banks, there is a need to raise the legitimate question of whether a proper balance is being struck between providing an incentive to invest in knowledge creation and maintaining the tradition of openness and free exchange of scientific information upon which such systems are based. In revising their legislation on the protection of intellectual property rights in line with the Agreement on Trade-related Intellectual Property Rights, developing countries should take advantage of the freedom the Agreement gives them to adopt provisions that not only protect inventions but also promote the transfer and

development of technology and take into account the social impact of technological change. We believe that an ongoing review and evaluation of the impact of the Agreement on strengthening the knowledge base and on development in general would be useful in this respect. The CSTD, in cooperation with the World Intellectual Property Organization (WIPO), UNCTAD, the World Trade Organization (WTO) and other international agencies, could contribute to this process.

15. The consequences of any technological innovation in the next century can no longer be viewed solely in terms of its benefits to specific groups or organizations, but should be assessed in terms of its full economic, social and environmental impact on society at large. The assessment needs to be carried out with the full participation of all those concerned. Among the many science- and technology-related topics about which the public has a right to be informed and heard are climate change and the consequences of advances in genetic engineering and in information and communications technologies. Scientists, including social scientists, in developing countries only rarely have the capacity and funding to carry out systematic, multidisciplinary impact analysis and risk assessment. International cooperation can be useful in providing assistance in this domain, including in building capacity in developing countries. The CSTD would be prepared to organize impartial forums at which biosafety and risk assessment in the field of biotechnology, and other issues arising from new technologies, could be discussed. More importantly, Governments should consider establishing appropriate mechanisms whereby representations of not only business, Governments and the scientific community but also non-governmental organizations, women's groups, minorities and the public-at-large can be invited to exchange views on the scientific, social and ethical issues of major concern. These are the challenges that will be posed by change in the twenty-first century; they are the challenges facing science and technology if it is truly to serve the goal of sustainable development.